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striæ with singular beauty. The "lines" appearing to shine with golden lustre. Specimens of *Frustulia saxonica* (very small) that have persistently defeated a fine modern  $\frac{1}{16}$ th in my possession, my Tolles wet  $\frac{1}{16}$ th, as also a  $\frac{1}{15}$ th belonging to a friend, surrender at once to this  $\frac{1}{6}$ th giving strong transverse striæ. The markings of *Surriella gemma* (dry mounted) are shown very strongly. Either as dots or hexagons, mounted in balsam the markings are much stronger than I have before seen with any lens. The behavior of this  $\frac{1}{6}$ th over *Cymatopleura elliptica* excited my unqualified admiration. In short "this most interesting glass," goes satisfactorily through my collection of test diatoms. The illumination used was (for the most part) from a German student's lamp. The maximum performance of the  $\frac{1}{6}$ th is obtained by working through a thick cover, say  $\frac{1}{5}$ th of an inch; with such a cover the objective works well dry, using central or nearly central light. Perhaps the most valuable property of the new  $\frac{1}{6}$ th will be recognized in its superior performances by centrally disposed light. With the experience I have had of the  $\frac{1}{6}$ th in this direction I am forced to the conclusion that these new system glasses of Mr. Tolles will become equally valuable to histologists and diatomists.—J. EDWARDS SMITH, *Ashtabula, O., July, 1874.*

## NOTES.

THE HARTFORD MEETING of the American Association for the Advancement of Science was in several ways a great success. The register exhibited the names of about 225 old members who were present, and 118 new members were elected. 165 papers were entered, ten of which were not passed by the Standing Committee for the want of abstracts, and twenty others were either withdrawn by their authors or declined by the Sectional Committees, leaving sixty-six papers in Section A, and sixty-nine in Section B. Of those in Section B, ten were given by title only, and the rest were read by their authors before the section or proper subsection, and were more or less discussed. Section A formed a subsection of chemistry on Monday afternoon, which was very strongly represented and held its session until Tuesday evening. The additional interest taken by the chemists in the Hartford meeting was undoubtedly owing to the resolutions passed at Northumberland, by which they declared that it was inadvisable to form a separate

society, and agreed to enter the Association and establish a permanent subsection. Their action in this respect cannot be too heartily endorsed by the scientists of the country, for it is just such action, on the part of all the different bodies of scientific men that now annually meet independent of the Association, that is needed to make the American Association the great power in this country which the British Association has become in England by the united efforts of all persons interested in the advancement of science. We feel confident that it will not be long before the Association of Mining Engineers will realize the advantages to be secured by uniting with the American Association, especially as under the new constitution they could organize, as the chemists have done, as a permanent body. The entomologists were present in goodly numbers, and while taking an active part in the meetings of Section B, they also organized as a club and held separate evening meetings, under the name of the Entomological Club of the American Association. From much that was said and done at the recent meeting, it was very evident that a strong feeling has expressed itself over all parts of the country in favor of a united effort to make the future meetings of the American Association in every way the expression of the advancement of science in the country, and with this effort, which is simply the natural result of the growth of the Association, the process of absorbing all the smaller scientific bodies of a national character is only a matter of time. The botanical element was more largely represented at the Hartford meeting than we remember ever to have noticed before, and now that the impetus has been given it is very reasonable to expect large additions from the botanical ranks at the future meetings. The geologists were as usual well represented and formed a subsection for Monday and Tuesday, with Prof. J. D. Dana in the chair. There were also more papers bearing on general zoological questions this year than for several past meetings, and Anthropology was made prominent by a number of quite interesting communications. On Monday Section B subdivided into Biology and Geology and continued to hold its meetings in subsections until Tuesday evening, when it held its final session with the exception of a very short one on Wednesday morning.

The older members were largely represented at this meeting, and a noticeable feature was the attendance of a number of past presidents of the Association. Under this head we recall Prof.

W. B. Rogers who ranks as the first president, he being in office when the Association was formed by the enlargement of the older Association of Geologists and Naturalists. The presence of Prof. Rogers was greeted with joy, as his health has prevented his taking his former active part in the meetings for several years. Professors Joseph Henry, J. D. Dana, F. A. P. Barnard, B. A. Gould, T. Sterry Hunt, Asa Gray, J. Lawrence Smith, and the retiring president, Prof. Joseph Lovering, were also present.

The address of the retiring President gave universal satisfaction, and though bearing more on the section to which he specially belongs than to Section B, we feel that all our readers will be glad to have us follow our course for several years and present it to them in the following numbers of the *NATURALIST*.

The social element of the meeting was well developed, and though there was very little private entertainment given to the members by the residents, there was a large number of citizens who, as the Local Committee, took an active interest in the Association, and in many ways made the meeting a very pleasant one. The only levee given to the Association was by Dr. Stearns on Thursday when a very enjoyable evening was passed. Several special invitations were received from the managers of the various institutions and large establishments in and about Hartford, and most of them were very generally accepted by members, and many very interesting works were visited. The special excursions arranged by the Local Committee were well planned and admirably carried out. The steamer excursion down the Connecticut to its mouth and return, on Saturday, was a perfect one and was greatly enjoyed by the several hundred persons who passed the day on the river; while the geologists, and all others who wished to go, had their full share in the several afternoon excursions to Tariffville and the Portland quarries; and all who went on the afternoon excursion to Cheneyville could only have experienced great pleasure at the sight of this model and beautiful little village, where the silkworm's slender threads are unwound and woven into substantial fabrics and gay ribbons. On Thursday, the day following the adjournment, a very interesting excursion took place, and consisted of a trip through the most beautiful portion of the State to Lakeville and the iron mines of Salisbury.

As was expected, a large amount of time was occupied in discussions relating to the new constitution, but as this very import-

ant matter was finally settled to the perfect satisfaction of all concerned, it was time well spent, and it is now believed that the future of the Association is firmly established on a basis that is fully adapted to the work it is to perform. The acceptance of the Act of Incorporation also gives an important legal existence to the Association which will add greatly to its power. The officers for the next meeting were elected under the new constitution, and very great additions to the interest and importance of the future meetings are expected from the addresses of the Vice-Presidents and the Permanent Chairmen of subsections. An important addition to the Standing Committee is also secured by the new constitution, as under it the past Presidents are now life members of the Committee; and the Secretaries, as well as the Chairmen of the sections, will be members of the Committee. In this way, the Committee becomes a much larger body, consisting of the veterans of American Science as well as the active officers of the Association, and will be fully capable of performing the important work that devolves upon it. It is also believed that by the election of the Secretaries of the sections a year in advance they will fully realize the importance of the position and the responsibilities which they accept.

The very cordial invitation which came from Detroit for the Association to hold its next meeting in that city, was so warmly tendered by the Governor of the State, the Mayor of the city, and the Detroit Scientific Society, that it was impossible for the Association to do anything but accept, and it was unanimously voted to hold the next meeting in Detroit, beginning on the second Wednesday in August, 1875.

The following were elected as the officers for the next meeting: *President*, J. E. Hilgard, of Washington; *Vice President of Section A*, H. A. Newton, of New Haven; *Vice President of Section B*, J. W. Dawson, of Montreal; *Chairman of Chemical Subsection*, S. W. Johnson, of New Haven; *Permanent Secretary for five years*, F. W. Putnam, of Salem; *General Secretary*, Samuel H. Scudder, of Boston; *Treasurer*, W. S. Vaux, of Philadelphia; *Secretary of Section A*, S. P. Langley, of Allegheny, Pa.; *Secretary of Section B*, N. S. Shaler, of Newport, Ky.

The officers of Section B, Natural History, for the Hartford meeting were:—*Permanent Chairman*, Mr. S. H. Scudder, of Cambridge; *Secretary*, Prof. Theo. Gill, of Washington; *Sectional*

*Committee*, Prof. S. F. Baird, of Washington; Prof. E. T. Cox, of Indianapolis; Prof. T. Sterry Hunt, of Boston.

Subsection of Biology. *Chairman*, Rev. Dr. E. A. Dalrymple, of Baltimore; *Secretary*, Mr. W. W. Bailey, of Providence. Subsection of Geology. *Chairman*, Prof. James D. Dana, of New Haven; *Secretary*, Prof. E. W. Hilgard, of Ann Arbor.

The following is a list of the papers read in Section B:—

- The Genera of Butterflies studied historically, by Samuel H. Scudder.  
 Discovery of twelve skeletons of *Dicotyles compressus* in the Valley Drift in Columbus Ohio, by John H. Klippart.  
 Present distribution of woodlands within the United States, by William H. Brewer.  
 Further Contributions to Physiographic Geology, by Richard Owen.  
 Change by Gradual Modification not the Universal Law, by Thomas Meehan.  
 On the Cotton Worm (*Aletia argillacea* Hübn), by Aug. R. Grote.  
 On *Sarracenia variolaris* as a Fly Catcher, by Dr. J. H. Mellichamp.  
*Darlingtonia Californica*, an Insectivorous Plant, by Wm. H. Canby.  
 The Lobster, by W. W. Wheildon.  
 On the Insects more particularly associated with *Sarracenia variolaris* (Spotted Trumpet leaf), by C. V. Riley.  
 On the Summer Dormancy of the Larvæ of *Phyciodes nycteis* Doubleday, with Remarks on the Natural History of the Species, by C. V. Riley.  
 Further observations on the Geology of Northwestern Massachusetts, with special reference to the Hoosac range, by Sanborn Tenney.  
 Botanical Observations, by Wm. H. Seaman.  
 Glacial Phenomenon in the Sierra Nevada, by John Muir.  
 Cremation among North American Indians, by John L. LeConte.  
 Instance of Replacement of Injurious insects by Human agency, by J. L. LeConte.  
 Geological Map of the United States and Territories, with Critical and Explanatory descriptions, by Prof. C. H. Hitchcock and Wm. P. Blake.  
 On Regeneration or Organic Molecular Conservation: a contribution to the doctrine of evolution, by Louis Elsberg.  
 On the Habits and Transformations of *Canthon Hudsonius* (Forst.) the common "Tumble-dung," by Charles V. Riley.  
 On the Larval Habits of the Cantharid genera *Epicauta* and *Henous*, by C. V. Riley.  
 On the Origin of North American Unionidæ, by Edward S. Morse.  
 On the Relations of Dentalium, by E. S. Morse.  
 On the Cave Fauna of the Middle States, by A. S. Packard, Jr.  
 Remarks on the Anderson School of Natural History, by F. W. Putnam.  
 On the Male and Female organs of the Sharks, with special reference to the use of the "Claspers," by F. W. Putnam and S. W. Garman.  
 On the Composition of the Pottery of the Mound-builders, by E. T. Cox.  
 A Remarkable Ancient Stone Fortification in Clarke County, Ind., by E. T. Cox.  
 Progress of Science in Maryland, by Mrs. Almira Lincoln Phelps.  
 Correction of previous description of the net of Hyptiotes, by Burt G. Wilder.  
 Note on the gestation of the little Brown Bat, by B. G. Wilder.  
 The relations of Amphioxus to the Marsipobranchs especially as indicated chiefly by a diagrammatic view of their respiratory apparatus, by B. G. Wilder.  
 The relations of the Vertebrate Classes as indicated by a tabular arrangement of their characters, constant, peculiar, and more or less common, by B. G. Wilder.  
 Physical History of New Hampshire, by C. H. Hitchcock.  
 The morphological significance and taxonomic value of the rectal pouch of Selachians (Elasmobranchs), by B. G. Wilder.  
 On the Significance of Classes among Vertebrates, by Theo. Gill.

- On the Characters and Relations of the American Genera of Cervidæ, by Theo. Gill.  
 On the Relations of Certain Genera of Cervidæ, by Theo. Gill.  
 List of the Vertebrate Animals of Outagamie Co. Wis. with notes, by D. S. Jordan.  
 Remains of an ancient earth work in Marblehead, Massachusetts, by J. J. H. Gregory.  
 Examination of forty-five Indian graves found in Marblehead, by J. J. H. Gregory.  
 Notes on some rare and interesting Carices of New York, by Geo. Vasey.  
 On the ascending process of the Astragalus in Birds, by Edward S. Morse.  
 Organ of Special Sense in the Lamellibranchiate genus *Yoldia*, by Wm. A. Brooks.  
 Notes on Tree Growth, by Asa Gray.  
 On the Disintegration of Rocks and its Geological Significance, by T. S. Hunt.  
 Equivalency of the Coal Measures of the United States and Europe, by C. A. White.  
 The Physical and Geological Characteristics of the Great Dismal Swamp and the Eastern Counties of Virginia, by N. B. Webster.  
 On the True Character of the so-called Eozoon Canadense, by L. S. Burbank.  
 Notes on Natural Erosion by Sand in the Western territories, by G. K. Gilbert.  
 The Recency of certain Volcanoes of the Western U. S., by G. K. Gilbert.  
 The Colorado Plateau Region as a field for geological studies, by G. K. Gilbert.  
 Small size of the brain in Tertiary Mammals, by O. C. Marsh.  
 Ancient Lake Basins of the Rocky Mountains, by O. C. Marsh.  
 The Wings of Pterodactyls, by O. C. Marsh.  
 On the Mechanical Condition of the Pebbles in the Newport Conglomerate and their supposed flattening by pressure, by Wm. B. Rogers.  
 On the Thickness of the Virginia Tertiary, as indicated by the Artesian borings at Fortress Monroe, by Wm. B. Rogers.  
 Notes on the Palæozoic Formations of South America, by O. A. Derby.  
 On the Classification of the Indian Languages of Mexico, by Porter C. Bliss.  
 Observations in a visit to the Cave of Cachuamilpa, Mexico, by Porter C. Bliss.  
 An Ascent of the Volcano of Popocatepetl in Mexico, by Porter C. Bliss.  
 On the Organic Change produced in the Bee by the different conditions to which it is subjected in its Larval State, by Mrs. Sophie B. Herrick.  
 On contact of Trap and Sandstone in the Connecticut Valley, by Wm. N. Rice.  
 Origin of the Cascades of the Columbia River, Oregon, by Wm. P. Blake.  
 How do Young Birds peck out of the Shell? by J. W. P. Jenks.  
 On the Trap rocks of the Connecticut Valley, by Edward S. Dana.  
 An Inquiry Concerning the Reversion of Thoroughbred Animals, by W. H. Brewer.  
 Notice of a pair of Trap-door Spiders from South America, by Chas. R. Dodge.  
 Traces of Ancient Civilization in Mexico, by Porter C. Bliss.  
 Observations on the Mesozoic of North Carolina, by W. C. Kerr.

WE have already given an account of Dohrn's zoological laboratory at Naples, and referred to the Anderson School of Natural History at Penikese, and the peripatetic laboratory annually set up by Prof. Baird in connection with the United States Fish Commission. In the January number of the "*Archives de Zoologie Expérimentale*," etc., M. Lacaze-Duthiers gives an interesting account of the "Laboratory of Experimental Zoology" established by him in 1872 at the suggestion of M. A. du Mesnil, director of the higher education under the minister of public instruction. It was opened on the coast at Roscoff, not far from Paris, and in a region zoologically rich. The funds devoted to the purpose were very small; the laboratory is a simple house on the seaside with five chambers and a pump to feed the aquaria; but judging by the

papers which have been published by Lacaze-Duthiers, Perrier and Giard, the amount of work done is greater so far as we are aware than at any other laboratory of the sort. An excellent feature of the "Laboratory of Experimental Science" is that it is not to be permanently established at one spot, but every five or six years will be moved from place to place until the marine fauna of France shall be thoroughly investigated. In this way a series of works will gradually be produced on the fauna of France.

There is still an opening in this country for just such schools as this, which combining general education and special research shall, in an inexpensive way, hold sessions of say, two months, extending over a few years at a time at different points along our coast. For example, the southern colleges could send professors and a few advanced students to Beaufort, N. C.; the Washington and Georgetown colleges could combine and have a summer session at Old Point Comfort; the Pennsylvania Colleges could rendezvous at Cape May, while the western and northern colleges could continue sending students to the Anderson School at Penikese. By mutual assistance and coöperation our extensive coast could be thoroughly explored and higher biological researches be carried on, as well as observations on the chemistry and physics of the sea.

THE Anderson School of Natural History at Penikese Island closed on the 29th of August. Fifty students received instruction including laboratory work and lectures from ten professors, and the degree of attention given and amount of original work done was gratifying. The moral success of the school is established, and we hope that want of means will not prevent the plans of the late Professor Agassiz from being carried out. There is great need of a physiological laboratory, a fish pond and other conveniences, which in time we hope will be supplied.

THE U. S. Engineers have a party in the field exploring the territories west of the 100th meridian, under Lt. Wheeler, U. S. A. Dr. H. C. Yarrow is the naturalist, and Prof. E. D. Cope the paleontologist of the expedition. The party started from Denver, Col., about July 20th. Collections will be made in all branches of Natural History. The expedition will return October 1st:

DR. FERDINAND STOLICZKA, the paleontologist to the geological survey of India, died in India at Shayok, June 19th, aged thirty-



six. A zoologist and geologist, his greatest work says "Nature," was his account of the fossil fauna discovered in the Cretaceous rocks of southern India.

THE number of visits paid during the year to the herbarium of the British museum for the purpose of scientific research, was 1020.

UPWARDS of 21,000 herbarium specimens have been received (chiefly presented) from all parts of the world at the herbarium of the Royal Gardens at Kew.

A NEW volume of Lacordaire's Genera of Coleoptera has lately appeared.

### BOOKS RECEIVED.

- Report of the Chief of Engineers for 1872-1873.* With maps. pp. 1179 and 1257. 8vo.  
*Tables and Formulæ.* Revised edition. Professional Papers, Corps of Engineers, U. S. A., No. 12. Washington, 1873. pp. 319, 8vo.  
*Geological Report of the Exploration of the Yellowstone and Missouri Rivers.* By W. F. Reynolds and F. V. Hayden. 1859-1860. Washington, 1869. With map. pp. 183, 8vo.  
*Report upon the so-called Yellowstone Expedition of 1870.* By Augustus C. Doane. Washington, 1873. pp. 40, 8vo.  
*Report upon Experiments made by W. H. Heard upon the Compressive Power of Pine and Hemlock Timber, Feb. 6, 1871.* By D. C. Houston. Washington, 1872. With map. pp. 12, 8vo.  
*Reconnaissance in the Ute Country, 1873.* By E. H. Ruffner. Washington, 1874. With a map. pp. 101, 8vo.  
*Stability of Arches.* By D. P. Woodbury. New York, 1858. With plates. pp. 438, 8vo.  
*Reconnaissance of the Yukon River, 1869.* By Charles W. Raymond. Washington, 1871. With map. pp. 113, 8vo.  
*Exploration of the Yellowstone River by W. F. Reynolds, communicated by the Secretary of War.* Washington, 1868. With map. pp. 174, 8vo.  
*Fabrication of Iron for Defensive Purposes.* Washington, 1871. With plates. pp. 233, 4to. Supplement, 1872. With plates. pp. 51, 4to.  
*Iron Lock Gates, Weser River, Germany.* Translation. By G. Weitzel. Washington, 1873. With plates. pp. 8, 4to.  
*Effects of Sea Water and Exposure upon the Iron-pile Shafts of the Brandywine-Shoal Light House.* By John D. Kurtz and Micah R. Brown. Washington, 1874. With plates. pp. 13, 4to.  
*Potomac Aqueduct of the Alexandria Canal, 1835-1840.* By William Turnbull. Washington, 1873. With plates. pp. 49, 4to.  
*Defenses of Washington.* By J. G. Barnard. Washington, 1871. With plates. pp. 152, 4to.  
*Geological Exploration of the Fortieth Parallel.* By Clarence King. Washington, 1870. Vol. III, with plates and atlas. pp. 647. 1871. Vol. V, with plates. pp. 525, 4to.  
*Use of the Barometer on Surveys and Reconnaissances.* By R. S. Williamson. New York, 1868. Two parts. With plates and Appendix. pp. 248 and 155, 4to.  
*North Sea Canal of Holland and Improvement of Navigation from Rotterdam to the Sea.* By J. G. Barnard. Washington, 1872. With plates. pp. 77, 4to.  
*Preliminary Report.—Explorations in Nevada and Arizona.* By G. M. Wheeler. Washington, 1872. With maps. pp. 96, 4to.  
*Removal of Blossom Rock, San Francisco Harbor.* By R. S. Williamson and W. H. Hener. Washington, 1871. With plates. pp. 40, 4to.  
*MAPS.—Western Territories, etc.* U. S. Military Map; New Mexico and Arizona; Texas, Kansas, etc.; Yellowstone and Missouri Rivers; Nebraska and Dakota; Indian Territory; South and Southeastern Nevada; Yellowstone Lake, etc., etc.  
*The Land and Fresh-water Shells of La Salle County, Ill.* By W. W. Calkins. Chicago, 1874, pp. 48, 8vo.  
*Annales Académici-Lugduni-Bataworum, 1868-1869.* pp. 475. 1869-1870. pp. 268, 4to.  
*Transactions of the Zoological Society of London, 1874.* Vol. VIII, Part 7. 4to.  
*Proceedings of the Zoological Society of London, 1873.* Part III, with illustrations. pp. 625-662, 8vo.  
*Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhandlinger og dets Medlemmers Arbejder i Aaret 1873.* L'Académie Royale de Copenhague, No. 2. With plates. pp. 248, 8vo.  
*Nomenclator Avium Neotropiceum.* Philippo Lutley Sclater et Osberto Salvin. London, 1873. pp. 171, 4to.  
*British Marine Algae.* By W. H. Grattann. London, W. C., 1874. Part X, illustrated. pp. 219-237, 8vo.  
*Annual Report of Department of Natural History.* Northwestern University. By Oliver Marcy. Chicago, 1873. pp. 11, 8vo.  
*Report by the Curators to the Governor.* University of the State of Missouri. Saint Louis, 1874. With plates. pp. 188, 8vo.  
*Iowa State Report on Insects.* By C. E. Bessey. Des Moines, 1874. With plates. pp. 23, 8vo.